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The Contribution of Small and Medium-sized Businesses to Gross Domestic Product: A Canada–United States Comparison

by Danny Leung and Luke Rispoli

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Authors' names are listed alphabetically.

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..	not available for a specific reference period
...	not applicable
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0^s	value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
^{p}	preliminary
^{r}	revised
x	suppressed to meet the confidentiality requirements of the *Statistics Act*
^{E}	use with caution
F	too unreliable to be published
*	significantly different from reference category ($p < 0.05$)

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Abstract

Adopting the methodology used to produce estimates of gross domestic product (GDP) by size for the United States, this paper estimates GDP for small and medium-sized businesses versus large businesses for the Canadian non-agricultural business sector in 2005. In the entire non-agricultural business sector, small and medium-sized businesses with less than 500 employees account for 54.2% of GDP in Canada and for 50.7% of GDP in the United States. When two industries with heavy government ownership in Canada (health and education) are excluded, the results are 52.9% and 50.3%, respectively.

Executive summary

Adopting the methodology used to produce estimates of gross domestic product (GDP) by size for the United States, this paper estimates GDP for small and medium-sized businesses versus large businesses for the Canadian non-agricultural business sector in 2005. In the entire non-agricultural business sector, small and medium-sized businesses with less than 500 employees account for 54.2% of GDP in Canada and for 50.7% of GDP in the United States. When two industries with heavy government ownership in Canada (health and education) are excluded, the results are 52.9% and 50.3%, respectively.

1 Introduction

The visibility of large firms far exceeds that of small and medium-sized firms for a number of reasons. Large firms are more likely to have extensive advertising campaigns. They sponsor major cultural and sporting events. Many that are listed on a stock exchange receive coverage from brokerages, and since one large firm can account for a substantial share of employment in some geographic areas, closures, layoffs, or hirings at large firms are often newsworthy.

Despite their lower visibility individually, small and medium-sized firms collectively play an important role in the economy. Small and medium-sized firms represent an important source of dynamism in the economy, accounting for a large share of both gross job gains and gross job losses each year.[1] The continual turnover of firms this represents is often said to be a conduit that introduces new and innovative products and processes into the economy.[2] Small and medium-sized firms serve specialized market segments that large firms may find unprofitable, by adopting flexible production processes that are capable of offering personalized products. Small and medium-sized firms also play an important role in the early stages of the product life cycle; taking advantage of their close relationships with their customers, small and medium-sized firms are often better positioned to take the basic technical innovations made by large firms and turn them into new products.[3]

This paper presents estimates of the contribution of small and medium-sized businesses to Canadian gross domestic product (GDP) that are methodologically comparable to those produced for the United States. In this paper, small and medium-sized firms are those with less than 500 employees, and large firms are those with 500 or more employees. Leung et al. (2011) produced the first Canadian estimates of GDP by firm size for 2005, using mostly firm-level data to allocate each component of GDP at basic prices (wages and salaries, supplementary labour income, mixed income, operating surplus, and indirect taxes on production less subsidies) to a firm-size class. However, these estimates are potentially incomparable to the ones produced for the United States by Kobe (2007) for 1998–2004 and by Popkin (2002) for 1997–1998 because of differences in methodology. In Kobe (2007) and Popkin (2002), all non-labour compensation components of GDP are allocated to size classes on the basis of an indirect method that uses supplementary aggregate statistics (the share of corporate receipts by employment-size class from the U.S. Census Bureau, and the share of the components of GDP across revenue-size classes from the Internal Revenue Service [IRS]). Moreover, Leung et al. (2011) used GDP at basic prices, while Kobe (2007) and Popkin (2002) used GDP at market prices. The difference between the two methodologies lies in the fact that GDP at market prices includes net indirect taxes on products (e.g., provincial sales taxes, the Goods and Services Tax [GST], and excise taxes on gasoline and cigarettes) while GDP at basic prices does not.

In this paper, estimates of GDP at basic prices by firm size for Canada in 2005 are computed by means of the approach used by Kobe (2007) and Popkin (2002). Basic-price estimates are then moved to market-price estimates by distributing the net indirect taxes on products in the Final Demand tables of the Input-Output Accounts to the appropriate industry and firm-size class. The Canadian estimates for 2005 are then compared to Kobe's (2007) estimates for the United States in 2004. While it would have been preferable to compare estimates for the same year, solid economic growth in both countries suggests that cyclical fluctuations in the contributions by firm-size category are unlikely to invalidate a comparison as to where the two economies stood relative to one another in the mid-1990s.

1. Balakrishnan (2008) showed that, in the years from 1993 to 2004, firms with 0 to 19 employees accounted for roughly 40% of job reallocation, the sum of gross job creation and gross job destruction.
2. See, for example, Acs and Audretsch (1990).
3. See Baldwin and Gellatly (2003) and Nooteboom (1994).

Having comparable estimates of the contribution of small and medium-sized businesses as opposed to large firms is important because firm size is an often-cited structural feature that distinguishes the Canadian economy from the U.S. economy. Previous papers have made Canada–United States comparisons of the contribution of small firms, but those papers covered only a part of the business sector and did not use an output measure consistent with those produced by Statistics Canada and the U.S. Bureau of Economic Analysis (BEA).[4] This paper presents GDP shares by firm size for the non-agricultural business sector, excluding owner-occupied housing.[5] GDP is superior to other measures of output, such as sales, because it measures the unduplicated value of goods and services generated by labour and capital, whereas sales include intermediate inputs. A firm could have high sales and low GDP, because it adds little to the value of the intermediate inputs it purchases.

Researchers have also often tried to relate differences in the size distribution across countries to differences in dynamism, maturity, and efficiency.[6] For Canada and the United States in particular, previous papers have argued that differences in firm size can account for a portion of the Canada–United States labour productivity gap. Most of those studies do not measure output using GDP.[7] The one paper that does, Baldwin et al. (2011), compares the productivity performance of the unincorporated and corporate sectors in the two economies. Since there can be large unincorporated firms and small corporations, that paper does not directly address the importance of size. Hence, this paper is a first step in better addressing the question of the importance of firm size to the Canada–United States labour productivity gap.[8]

Small and medium-sized businesses with less than 500 employees account for a greater share of non-agricultural business-sector GDP in Canada (54.2%) than in the United States (50.7%). This greater importance of small and medium-sized businesses in Canada is found in most industries, but is more pronounced in services-producing industries than in goods-producing industries. This is partly the result of the particular characteristics of two industries that have heavy government ownership in Canada—health and education. When these two industries are excluded from the analysis, the results are 52.9% and 50.3%, respectively.

The next section outlines Kobe's (2007) methodology for calculating GDP by size, and details how Canadian estimates of GDP by size at basic prices are transformed to estimates at market prices. Section 3 presents the data sources; results are found in Section 4, and Section 5 concludes.

4. For example, Baldwin et al. (2002) compared the employment, shipments, and value-added shares of small, medium-sized, and large firms in the manufacturing industry, and Leung et al. (2008) presented employment shares by firm size for the non-agricultural, non-financial portion of the corporate sector in the two countries.
5. Owner-occupied housing is excluded from the business sector because it is produced by the household sector.
6. See, for example, Beck et al. (2003).
7. See, for example, Almon and Tang (2009) and Leung et al. (2008).
8. The next step would be to develop labour input measures by firm size for the two countries.

2 Methodology

2.1 Kobe's (2007) methodology for making estimates of the contribution of small and medium-sized businesses

The availability of firm-level administrative data allowed GDP by size for Canada to be calculated in Leung et al. (2011). With firm-level data, it is a relatively straightforward procedure to assign each firm's GDP to the appropriate size category. On the other hand, Kobe's (2007) estimates for the United States were produced mainly from tabulations of revenue and the components of GDP by revenue-size class and industry published by the IRS[9] as well as from tabulations of receipts and payroll by employment-size class and industry from the U.S. Census Bureau.[10] These tabulations were taken and used to break down the BEA data on GDP by major component and industry. What follows in this section is a short summary of Kobe's (2007) methodology. A detailed description of Kobe's (2007) methodology can be found in that paper.

The Statistics of U.S. Businesses (SUSB) program of the U.S. Census Bureau provides tabulations of payroll and receipts by employment size of firm, by industry, and by legal form of organization. All industries are covered except for public administration, agriculture, and some minor industries. As a result, estimates of U.S. GDP by size exclude the agricultural industry. For the wage and salaries component of GDP, the U.S. Census Bureau's estimates of payroll by employment size of firm is used directly to split wage and salaries across firm-size classes.[11]

For the non-labour compensation portions of GDP for corporations, a different approach needs to be adopted because the U.S. Census Bureau does not have a breakdown of these components by firm size. The IRS does produce non-compensation components of GDP by size, but by revenue size and not employment size. To combine the two sources of data, Kobe (2007) first took the share of receipts for large firms from the U.S. Census Bureau and multiplied it by total revenue reported by the IRS. This calculation gave the fraction of revenue accounted for by large firms. The amount was then used to find the number of revenue-size classes that large firms account for. For example, let us say that large firms account for 60% of receipts in the SUSB program and that the IRS reports that firms have in total $100 billion in revenues. Let us suppose also that the $100 billion is split across three revenue-size categories: firms in the $0-million-to-$1-million size category account for $20 billion of the total revenue; firms in the $1-million-to-$5-million size category account for $30 billion of the total revenue; and firms with greater than $5 million in revenue account for the remaining $50 billion of the total revenue. In this example, $60 billion of total revenue would be accounted for by large firms, and large firms would account for the entire share of the greater-than-$5-million size category and for one-third of the $1-million-to-$5-million size category. Once this split is found, it is applied to all of the IRS tabulations of the components of GDP by revenue-size class. That is to say, the large-firm share of any of these components would be the amount in the $5-million size category plus one-third of the $1-million-to-$5-million size category. The estimates of components of GDP by size obtained from the U.S. Census Bureau and IRS data are then benchmarked industry-by-industry to the official statistics from the BEA.

9. The IRS tabulations are available at www.irs.gov/taxstats/index.html.
10. The U.S. Census Bureau tabulations are available at www.census.gov/econ/susb.
11. Benefits are not allocated by means of payroll shares. In both Kobe (2007) and Leung et al. (2011), supplementary data sources were used to allocate the legislated and non-legislated portions of supplementary labour income to firm-size classes. The methodology and data sources employed in Leung et al. (2011) to allocate supplementary labour income are also used in this paper.

Since firm-level data are available for Canada, Kobe's (2007) methodology can be implemented to produce estimates for Canada.[12] The wage-and-salary component of GDP is divided by employment size of firm according to payroll share, and non-compensation components of GDP are divided according to a combination of revenue shares by employment size of firm and non-compensation shares by revenue size of firm, despite the fact that non-compensation shares by employment size of firm are available. Once all GDP components by size and industry are obtained, they are benchmarked to the industry totals in the Input-Output Accounts.[13]

There are two notable commonalities in the methodologies of Kobe (2007) and of Leung et al. (2011). First, payroll by employment size of firm is used to allocate wages and salaries across firm-size classes in both papers. The two papers differ only in how the non-compensation components for GDP are allocated. Second, in both papers, the non-compensation portions of GDP for unincorporated enterprises are attributed entirely to small firms because of data limitations with respect to the periods of interest; the methodology described above applies only to the corporate share of the non-labour compensation components of GDP. As a consequence, the contribution of small and medium-sized firms to GDP is likely to be overestimated in both countries because not all unincorporated firms are small. Kobe (2007) suggested that the small-and-medium-sized-business share in the United States may be lower by two percentage points in 2002 (the only year with respect to which this issue could be investigated). In Canada, there are much fewer large-sized businesses in the unincorporated sector. The T1 (*Income Tax and Benefit Return*) tax data suggest that the small-and-medium-sized-business share may be lower by as much as 0.4 percentage point.[14]

2.2 From basic prices to market prices

Different countries produce estimates of value-added by industry at different valuations. Industry GDP estimates are valued at basic prices in Canada, while they are calculated at market prices in the United States. The difference between estimates at market prices and estimates at basic prices is indirect taxes and subsidies on products, which represented about 9% of the Canadian economy in 2005. This section describes how Canadian estimates of GDP by size at basic prices are modified to include net indirect taxes on products.

In the United States, indirect taxes on products (commodity taxes) are included in the output of the industry that is responsible for collecting the tax and remitting it to the government.[15] Sales taxes and excise taxes are two primary examples of these taxes. General sales taxes can be collected by retailers, wholesalers, and services establishments. Sales taxes on goods are shown to be part of output in either the wholesale or retail industry, while sales taxes on services are included in the output of the services industry that provides the service. Only a few excise taxes, such as taxes on tobacco and liquor, are allocated to manufacturing. The

12. The Canadian GDP-by-size estimates are calculated by using the same revenue-size categories as those presented in the IRS tables. Adjusting the size categories by industry-specific purchasing power parities does not substantially change the results.
13. More specifically, the estimates are first benchmarked to Rispoli (2009*a*,*b*,*c*), who generated value-added by component for unincorporated businesses and for corporations. These, in turn, are benchmarked to the Input-Output Accounts.
14. The estimate of large-sized unincorporated enterprises was based on the aggregation of GDP items (labour income, interest payments, taxes paid, depreciation, and net income) from the redesigned T1 2008 tax data for unincorporated enterprises. Data on large-sized unincorporated enterprises are included mostly under partnerships. The redesign involved separating enterprises in the 2008 T1 income tax returns into sole proprietorships and partnerships. A database on partnerships linking the individual T1 enterprises involved in partnerships to the other partnerships was developed by using T5013 (*Statement of Partnership Income*) information or other partnership information as reported on the T1 income tax returns. At present, these data are not available for years prior to 2008. As a consequence, the estimate of large-sized unincorporated enterprises could not be drawn for previous years.
15. For a detailed description of the allocation of indirect taxes on products in the United States, see Horowitz and Planting (2009).

remaining excise taxes are allocated to the wholesale and retail industries. Custom duties are also considered commodity taxes and shown as part of the output of wholesalers.

In Canada, taxes on products by type of tax and commodity are available from the Input-Output Accounts, while estimates of taxes by industry are not available from this source. Industry estimates of commodity taxes are obtained for Canada by following the method developed by the BEA input-output account mentioned in the previous section. That is, commodity taxes are included in the output of the industry that is responsible for collecting the tax and for remitting the tax receipts to the government. The Goods and Services Tax/Harmonized Sales Tax (GST/HST) on services is allocated to the services industry, while the GST/HST on goods is split between the wholesale and retail industries on the basis of their respective shares of net GST/HST remitted to the Canada Revenue Agency (CRA).[16] Provincial sales taxes are allocated to retailers. Import duties, excise taxes, and gallon taxes on fuels are allocated to wholesalers. Excise taxes on tobacco and liquor are allocated to manufacturers.

After one has allocated indirect taxes to the industries collecting the taxes, either operating revenue (for all taxes except GST/HST) or value-added (only for GST/HST) by size of business is employed to distribute the taxes across firm-size classes.

16. It is found that 75% of the GST/HST collected by firms in the trade industry is collected by retailers and that 25% is collected by wholesalers.

3 Data sources

In order to obtain measures of all the different components of GDP, data from a number of administrative files are used. The Generalized Index of Financial Information (GIFI) income statements included with the T2 (*Corporation Income Tax Return*) corporate income tax filings of firms are the main data source used to generate measures of revenue and operating surplus that are consistent with those used in the System of National Accounts (SNA).[17] The main data source for labour income is the T4 (*Statement of Remuneration Paid*) slips issued by every business, both unincorporated and corporate, to its employees for income tax purposes.[18] The employment of each firm is obtained from the Survey of Employment, Payrolls and Hours. The net GST file from the CRA is used to split GST on goods between retailers and wholesalers.

The Business Register is used to map all information from the above data sources to the appropriate ultimate parent enterprise group, the concept of the firm used by Leung et al. (2011) and in most part by Kobe (2007). An enterprise is a legal entity or group of consolidated legal entities associated with a complete set of financial statements. An ultimate parent enterprise group is a group of enterprises controlled through majority ownership by a common enterprise, the ultimate parent enterprise. This definition of the firm is appropriate for this analysis because it is the ultimate parent that makes decisions for the group of enterprises it owns and controls.

Kobe's (2007) approach starts with the revenue and payroll distributions across firm employment-size classes from the SUSB. Armington (1998) stated that a firm in the SUSB is the largest aggregation of business legal entities under common ownership and control.[19] However, the tabulations of revenue and the components of GDP by revenue-size class from the IRS are at a lower level of firm aggregation. They are at a lower level of aggregation because businesses in the United States may file consolidated tax returns with the IRS; however, consolidated tax returns are not mandatory. Furthermore, in order to qualify to file a consolidated return, the parent corporation must own at least 80% of the stock of the other members of the group,[20] a rate higher that the 50% used to define an ultimate parent enterprise group above. Since not all businesses file consolidated returns in the United States, and since the level of aggregation is lower than the ultimate parent enterprise group even when they do file consolidated returns, there will be fewer firms in the large-revenue-size categories than if all ultimate parent enterprise groups filed consolidated returns.[21] As a result, the share of GDP accounted for by large firms in the United States is likely to be understated.

17. SNA profits are based on operating profits, profits earned as a result of production, rather than on total profits.
18. As in Leung et al. (2011), this paper uses the GIFI and T4 files prepared by the Enterprise Statistics Division and Income and Expenditure Accounts Division, respectively, at Statistics Canada.
19. Moreover, the industry of a multi-unit firm is determined by means of payroll in the SUSB, the same approach as in Leung et al. (2011).
20. See Internal Revenue Service (2010) for more details.
21. Businesses file unconsolidated returns in Canada. For the purposes of this analysis, the Business Register is used to aggregate these unconsolidated returns to the ultimate parent enterprise group. In the process of aggregating unconsolidated returns, care was taken to omit items in the income statement that would lead to double counting in revenues and profits.

4 Results

In Canada, small and medium-sized businesses (less than 500 employees) accounted for $576.9 billion, or 54.2%, of business-sector GDP in 2005, while large-sized businesses (500 or more employees) accounted for $486.7 billion, or 45.8%, of business-sector GDP in 2005 (Table 1).[22,23] In the United States, small and medium-sized businesses accounted for $4.7 trillion, or 50.7%, of business-sector GDP in 2004, while large-sized businesses accounted for $4.6 trillion, or 49.3%, of business-sector GDP in 2004 (Table 1).

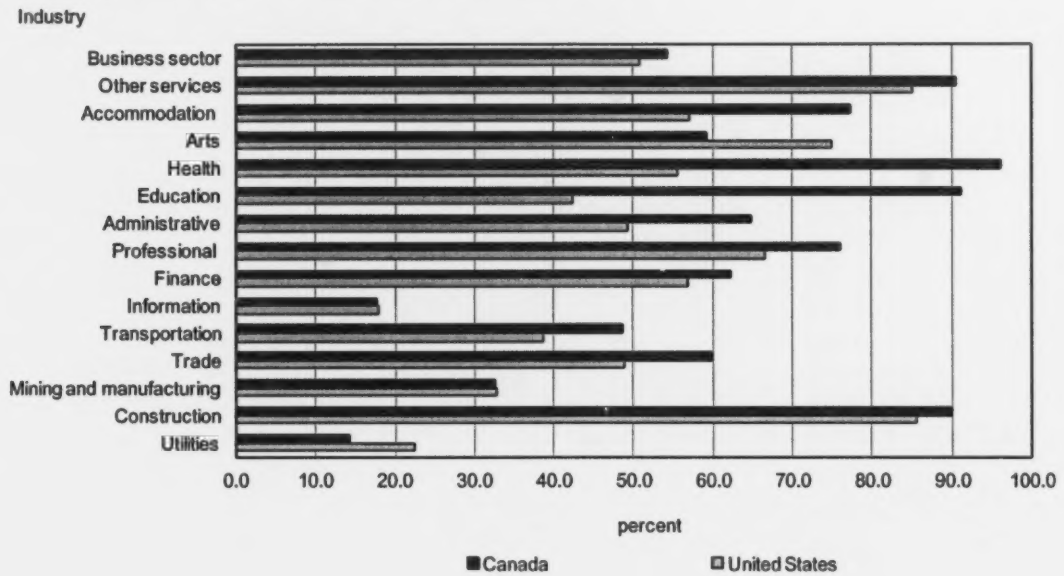
Table 1
Business-sector gross domestic product by size of business, Canada (2005) and the United States (2004)

	Canada	United States	Canada	United States
	billions of dollars		percent	
Small and medium-sized	576,929	4,717,708	54.2	50.7
Large	486,737	4,593,035	45.8	49.3
Total	1,063,666	9,310,743	100.0	100.0

Sources: Statistics Canada, authors' own calculations (gross domestic product estimates for Canada for 2005); and Kobe (2007) (gross domestic product estimates for the United States for 2004).

22. The business sector excludes agriculture and owner-occupied housing.
23. Since the collection of net indirect taxes on products in Canada is evenly distributed between small and large businesses, the shares of GDP at market prices by business size are not substantially different from those at basic prices. Leung et al. (2011) reported that small businesses in Canada generated 54.3% of business-sector GDP at basic prices.

Chart 1
Small-and-medium-sized-business share of gross domestic product at market prices by industry, Canada and the United States



Sources: Statistics Canada, authors' own calculations (firm-size gross domestic product estimates for Canada for 2005); and Kobe (2007) (firm-size gross domestic product estimates for the United States for 2004).

Chart 1 shows that, in both Canada and the United States, small and medium-sized firms accounted for the majority of GDP in most industries: construction; finance; professional services; health; arts, entertainment, and recreation; accommodation and food services; and other services (data may be found in Text table 1 in the Appendix). In Canada, small and medium-sized firms also accounted for the majority of GDP in trade, educational services, and administrative services. Interestingly, the contribution of small and medium-sized firms to GDP is similar in Canada and the United States with respect to the goods-producing industries, while small and medium-sized firms in Canada tend to have much higher shares in the services industry. This finding is consistent with market size being a determinant of firm size. Since goods are more likely to be traded than services, the North American Free Trade Agreement would mitigate the effect population size would have on goods-producing firms. Similarly, since services are less likely to be traded, the lower concentration of the Canadian population would limit the size of Canadian services-producing firms compared to their U.S. counterparts. That being said, the dominance of small and medium-sized firms in education and health in Canada is driven by the fact that government plays a much more direct role in these industries in Canada than in the United States and the fact that, when the public part of education and health is not included in these business-sector estimates for both countries, the small-and-medium-sized-business share in Canada falls to 52.9 %, compared to 50.3% in the United States.

Table 2 shows the distribution of small-and-medium-sized-business GDP and large-business GDP across industries in Canada and United States. Small and medium-sized businesses in the two countries have a similar industry structure, as the same five industries accounted for 70% of small-and-medium-sized-business GDP in the United States and for close to 75% of the small-and-medium-sized-sector GDP in Canada. In Canada, the wholesale and retail industries combined produced the largest share of small-and-medium-sized-business GDP (21%),

followed by finance (16%), mining and manufacturing (17%), construction (12%), and professional services (8%). In the United States, finance contributed the most to small-and-medium-sized-business GDP, at 22%, followed by the wholesale and retail industries combined (15%), mining and manufacturing (11%), professional services (11%), and construction (10%). However, one notable difference occurred in health (9% in the United States compared to 5% in Canada), as the United States has more private health care facilities than does Canada.

As regards large businesses, mining and manufacturing were the largest contributors to GDP of large-sized firms in both countries. The contribution of mining and manufacturing to the GDP of large-sized firms in Canada was 42%, compared to 23% in the United States. Mining and manufacturing were followed in importance in both countries by the wholesale and retail industries combined (17%), and then by finance (17% in the United States and 12% in Canada). Similar to small-and-medium-sized-business GDP, large-business GDP in health was substantially greater in the United States (8%) than in Canada.

Table 2
Distribution of gross domestic product by size of business and industry, Canada (2005) and the United States (2004)

	Small and medium-sized		Large	
	United States	Canada	United States	Canada
		percent		
Mining and manufacturing	11	17	23	42
Utilities	1	1	4	6
Construction	10	12	2	2
Wholesale and retail trade	15	21	17	17
Transportation and warehousing	3	5	4	6
Information and cultural industries	2	1	10	8
Finance	22	16	17	12
Professional services	11	8	6	3
Administrative services	4	4	4	2
Educational services	1	0	1	0
Health services	9	5	8	0
Arts, entertainment and recreation	2	1	1	1
Accommodation and food services	4	5	3	2
Other services	5	4	1	0
Total	100	100	100	100

Sources: Statistics Canada, authors' own calculations (firm-size gross domestic product estimates for Canada for 2005); and Kobe (2007) (firm-size gross domestic product estimates for the United States for 2004).

5 Conclusion

This paper presents estimates of the contribution of small and medium-sized businesses to Canadian GDP that are calculated according to the methodology applied by Kobe (2007) in her study for the United States. Having comparable estimates of the contribution of small and medium-sized firms is important because firm size is a structural feature that distinguishes the two economies. Obtaining estimates of GDP by size for both countries is the first step in ascertaining whether difference in firm size is an important factor in explaining the Canada–United States labour productivity gap.

The contribution of small and medium-sized firms with less than 500 employees was found to be higher in Canada (54.2%) than in the United States (50.7%). Small and medium-sized firms accounted for the majority of GDP in many industries: 10 of 14 industries in Canada and 7 of 14 industries in the United States. The contribution of small and medium-sized firms was more similar between the two countries in the goods-producing industries than in the services industries. This finding is consistent with market size being a key determinant of firm size and with goods being more likely to be traded across borders than services. Other causes behind the difference can be found in the public provision of services in the health and education industries, which leads to significant differences in market structure in the two countries in these particular industries.

Future work to be carried out by the authors in this area will focus on developing comparable measures of labour input by firm size, so that labour productivity by firm size can be calculated. It will also develop new ways to distribute the non-compensation components of GDP of unincorporated enterprises across employment-size classes. Finally, it will develop estimates that cover a longer time period, in order to allow for examining the extent to which differences in the contribution that small and medium-sized businesses make to the economy vary over time.

Text table 1
Small-and-medium-sized-business share of gross domestic product at market prices by industry, Canada and the United States

	United States	Canada
	percent	
Utilities	22.4	14.2
Construction	85.6	89.9
Mining and manufacturing	32.7	32.5
Wholesale and retail trade	48.7	59.7
Transportation and warehousing	38.6	48.5
Information and cultural industries	18.0	17.7
Finance	56.8	62.2
Professional services	66.6	76.2
Administrative services	49.3	64.9
Educational services	42.3	91.1
Health services	55.4	96.2
Arts, entertainment and recreation	74.9	59.2
Accommodation and food services	57.1	77.4
Other services	85.0	90.6
Business sector	50.7	54.2
Business sector excluding health and education	50.3	52.9

Sources: Statistics Canada, authors' own calculations; and Kobe (2007).

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